

APPENDIX J: USE ATTAINABILITY ANALYSIS

**USE ATTAINABILITY ANALYSIS
FOR
SALINAS RIVER LAGOON (NORTH),
OLD SALINAS RIVER ESTUARY,
AND TEMBLADERO SLOUGH
IN
MONTEREY COUNTY, CALIFORNIA**

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1 INTRODUCTION

Section 303(c) of the Clean Water Act (CWA) requires each State to develop water quality standards that protect the chemical, physical, and biological integrity of the State's waterbodies. Water quality standards under the Clean Water Act consist of three elements: Use Classification, Water Quality Criteria, and Antidegradation Policy (CWA § 303(c)(2); 40 C.F.R §§ 130.3, 131.6, 131.10, 131.11). Use Classification, termed "beneficial uses" under California law, are "uses specified in water quality standards for each water body or segment whether or not they are being attained." (40 C.F.R § 131.3(f)). Beneficial uses must be consistent with the goal of CWA section 101(a)(2)¹, which is to provide for "the protection and propagation of fish, shellfish, and wildlife and ... recreation in and on the water" (the so-called "fishable/swimmable" uses), unless the state demonstrates that those uses are not attainable. Beneficial uses must also consider, among others, the use and value of water for public water supplies, agriculture and industry, and the water quality standards of downstream waters (40 C.F.R. § 131.10).

Beneficial uses for surface waters in the Central Coast Region of California are designated in The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Coast Region, 1994. The Basin Plan lists the beneficial uses for approximately 1,000 water bodies under their jurisdiction.

Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough are located in Monterey County near the mouth of the Salinas River at the Pacific Ocean. Beneficial uses for these waterbodies include: Contact and Non-contact Recreation (REC-1 and REC-2), Wildlife Habitat (WILD), Cold Freshwater Habitat (COLD), Warm Fresh Water Habitat (WARM), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), Preservation of Biological Habitats of Special Significance (BIOL), Rare, Threatened, or Endangered Species (RARE), Estuarine Habitat (EST), Commercial and Sport Fishing (COMM), and Shellfish Harvesting (SHELL). The beneficial uses for each waterbody are listed in Table 1-1.

¹ Hereto referred to as the fishable/swimmable use.

Table 1-1. Beneficial uses for Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough

Beneficial Use	Waterbody		
	Salinas River Lagoon (North)	Old Salinas River Estuary	Tembladero Slough
Water Contact Recreation (REC-1)	X	X	X
Non-Contact Water Recreation (REC-2)	X	X	X
Wildlife Habitat (WILD)	X	X	X
Cold Fresh Water Habitat (COLD)	X	X	
Warm Fresh Water Habitat (WARM)	X	X	X
Migration of Aquatic Organisms (MIGR)	X	X	
Spawning, Reproduction, and/or Early Development (SPWN)	X	X	X
Preservation of Biological Habitats of Special Significance (BIOL)	X	X	
Rare, Threatened, or Endangered Species (RARE)	X	X	X
Estuarine Habitat (EST)	X	X	X
Commercial and Sport Fishing (COMM)	X	X	X
Shellfish Harvesting (SHELL)	X	X	X

Recently, while reviewing bacteria water quality objectives related to Total Maximum Daily Loads (TMDLs), Central Coast Water Board (Water Board) staff questioned the validity of assigning the SHELL beneficial use to areas where it is highly unlikely that any shellfish are living. Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough have never been thoroughly examined to determine if the SHELL beneficial use is appropriate to this waterbody. The definition of this beneficial use is:

Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial or sport purposes. This includes waters that have in the past, or may in the future, contain significant shellfisheries.

Preliminary assessments indicate that the beneficial use of shellfishing may not be appropriate. Beneficial uses attained on or after November 28, 1975 are “existing uses” and indicate that there is evidence that the use is occurring or that water quality is sufficient to allow the use to occur. A beneficial use that is determined to be “existing” may not be removed. To remove a use that is not intended to satisfy the minimum of “fishable/swimmable,” it must be demonstrated that the use is not attainable through one of the factors listed in 40 CFR 131.10(g). To remove “fishable/swimmable” uses, a use attainability analysis (UAA), supported by at least one of the factors listed in 40 CFR

131.10(g), must be conducted. (U.S. EPA Water Quality Standards Handbook, pp. [2-6]-[2-8]).

Staff believes the 1976 listing of a shellfish beneficial use for Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough was in error. In the 1975 Basin Plan, Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough did not have shellfishing listed as a beneficial use. In 1976, these waterbodies were listed as having shellfishing as a beneficial use, with no supporting documentation or rationale. Chris Rose, author of this report, questioned other staff at the Water Board as to why this change was made. Water Board staffs' recollection was that in 1976, several waterbodies in the region were given a SHELL beneficial use, without supporting documentation, for what appeared to be administrative reasons. **Although legally a UAA must be performed in order to remove the beneficial use of shellfishing from the Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough, staff wants to emphasize that the initial listings of these waterbodies for SHELL did not appear to be scientifically based².**

The purpose of this UAA is to provide an assessment of the shellfishing beneficial use for Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough that would serve as the basis for amending the Basin Plan to remove the beneficial use of shellfish for these waterbodies. Such a determination must coordinate with Total Maximum Daily Loads (TMDLs) for fecal coliform in the Lower Salinas River waterbody so the TMDL will set proper levels for water quality protection.

² See section 4.4 for additional information on this subject.

2 CHARACTERIZATION OF THE SEGMENTS AND WATERSHED

This section characterizes Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough within the Salinas River watershed.

The Salinas River Lagoon (North) is located in Monterey County, approximately 11 miles north of the city of Monterey, at the confluence of the Salinas River and the Monterey Bay. The Salinas River Lagoon (North) is approximately 3 miles long and contains a round basin that slims into the river rarely exceeding 300 m wide. It varies from a width of about 10 m at its extreme upstream end where the River joins the lagoon, to about 300m as it widens out before reaching the ocean.

The Old Salinas River Estuary is located in Monterey County, just north of the Salinas lagoon. It is approximately 4 miles long and extends in a north south direction from the Salinas River Lagoon (North) to Moss Landing Harbor at Sandholt Bridge. It is commonly referred to as the Old Salinas River channel.

The Tembladero Slough is located near the city of Castroville, Monterey County, and extends approximately 3 miles. The slough originates around State Highway 183 and terminates at the Old Salinas River Estuary.

The three waterbodies are depicted in Figure 2-1.

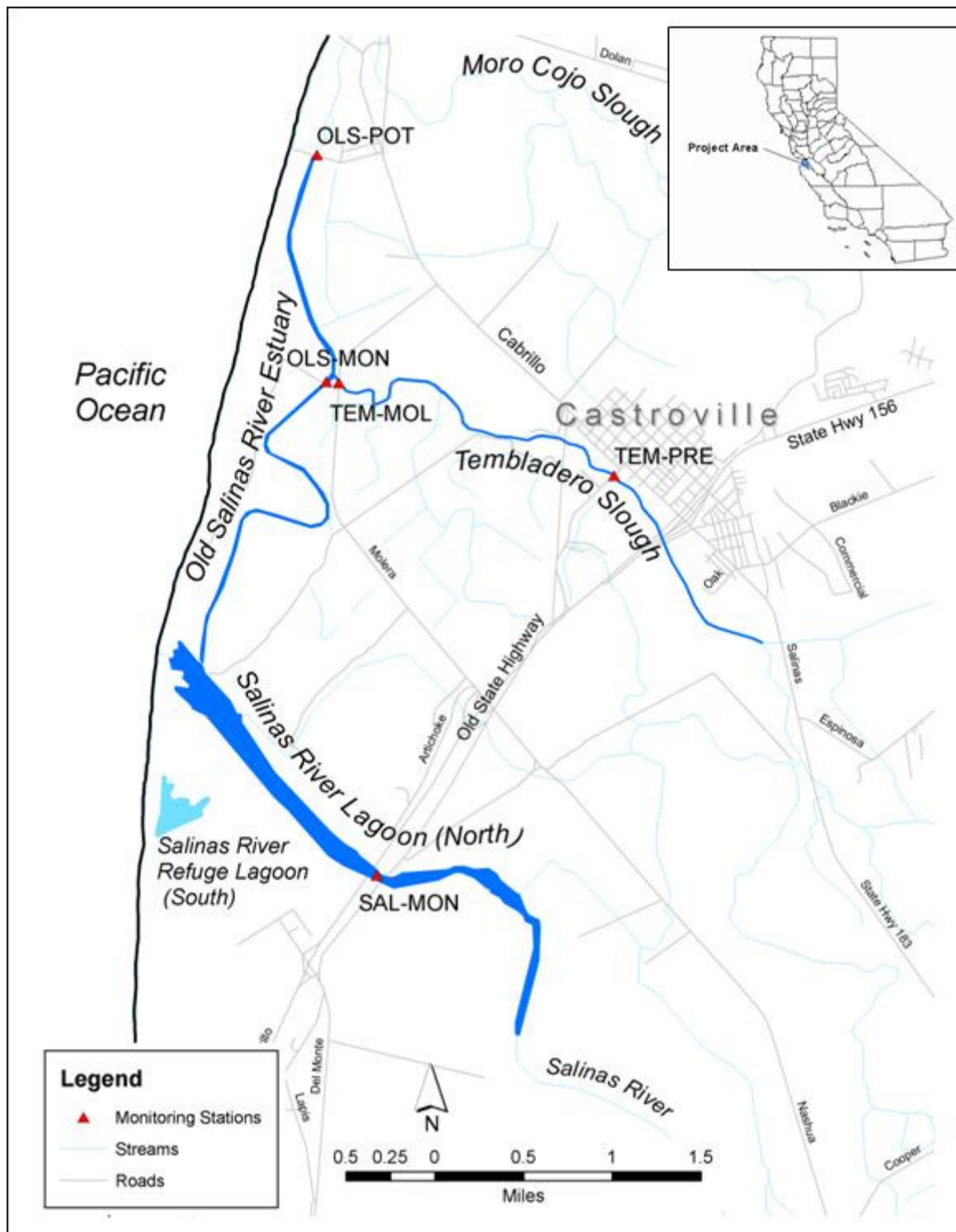


Figure 2-2-1. Location of Salinas River Lagoon, Old Salinas River Estuary, and Tembladero Slough.

3 METHODOLOGY

A use attainability analysis (UAA) is a structured scientific assessment of the physical, chemical, biological, and economic factors affecting the attainment of a designated use (40 CFR 131.3). The purpose of a UAA is to provide information in order to decide whether a designated use is attainable or not.

Staff used the following methodology for this UAA: Staff analyzed existing water quality data, conducted reconnaissance work in the area, contacted persons with knowledge of the area and performed a literature review on the lifecycle and habitat requirements of shellfish. These methods allowed staff to compare information gathered to the six factors that may provide a legal basis for changing or removing a designated use (40 CFR 131.10(g)). These factors are:

- (1) Naturally occurring pollutant concentrations prevent the attainment of the use.
- (2) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met.
- (3) Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.
- (4) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use.
- (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unless these conditions may be compensated, unrelated to water quality preclude attainment of aquatic life protection uses.
- (6) Controls more stringent than those required by Sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact.

To remove a designated use that is not an existing use, the state must demonstrate that attaining the designated use is not feasible under one or more of the six conditions listed above. If a state wishes to remove any fishable/swimmable uses, it must perform a UAA (40 C.F.R. § 131.10(j)). Prior to

removing a use, the state also must provide notice and an opportunity for a public hearing (40 C.F.R § 131.10(e)).

The determination of whether or not a use is “existing” must include an evaluation of both the actual occurrence of the use activity (e.g., have shellfish been present?) and whether or not the level of water quality necessary to support the use has been achieved at any time since November 28, 1975. If the level of water quality necessary to support a use has been achieved within that time period, the use is considered “existing” and must be protected, regardless of whether or not the use activity has actually occurred.

Figure 3-1 shows the generalized methodology used in this UAA process. This methodology was taken from the Impaired Waters Guidance (SWRCB, 2005) for completing a UAA. Explicit in these analyses is a determination of specific waterbody attributes that are either conducive to attaining or preventing a given use. These attributes are evaluated to determine if certain modifications or controls would allow the use to be attainable and, if so, the feasibility or reasonableness of those options.

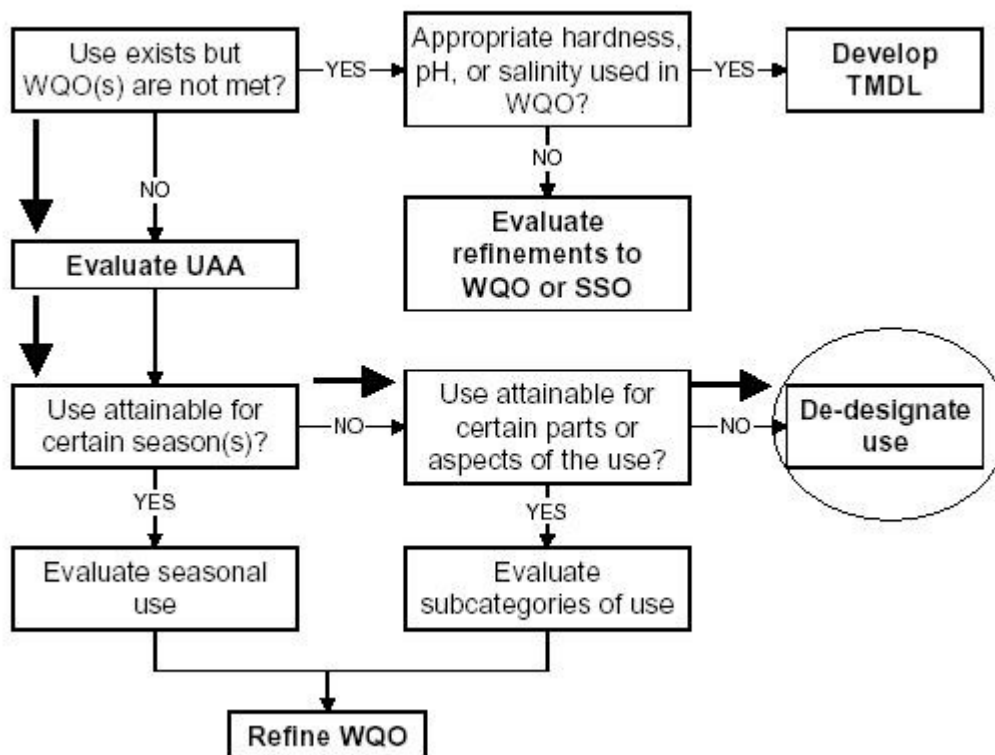


Figure 3-1. Summary of steps to determine whether to de-designate the SHELL beneficial use.

3.1 Methodology Steps

3.1.1 Step 1: Is the designated use being attained?

A beneficial use that is currently being attained, or that has been attained anytime on or after November 28, 1975 (the date on which the Federal Water Quality regulations took effect), is defined as an “existing use.” A beneficial use that is defined as an existing use is evidence that the use is occurring or that water quality is sufficient to allow the use to occur. An existing designated use may not be removed.

Staff engaged in activities with the Watershed Institute, California State University, Monterey Bay, to determine whether the shellfishing beneficial use is or has been occurring since November 28, 1975. The information staff obtained is contained in an unpublished document available at the Water Board (Watson *et al*, 2006).

3.1.2 Step 2: Is water quality sufficient to attain the beneficial use?

When a beneficial use does not appear to exist, the waterbody may still “attain” the use. For example, a waterbody that is not being used as a drinking water supply source may be of sufficient quality and quantity to be a future source of drinking water. In this case, the beneficial use is being attained (although it is not being used) and that beneficial use may not be removed from the waterbody.

Therefore, for the SHELL beneficial use, we evaluated the concentration of bacteria in the waterbody from 1975 to present. Additionally, Water Board staff tried to determine if the hydrology, salinity and temperature of the water, along with the substrate of the waterbody, would allow shellfish to live in these environments.

Step 2a: Can the condition be compensated for with effluent discharges without violating water conservation requirements?

If the condition can be compensated for with effluent discharges without violating water conservation requirements, the use may not be removed.

3.1.3 Step 3: What factors preclude the attainment of the beneficial use?

This step determined what factors preclude the attainment of the beneficial use.

3.1.4 Step 4: Is restoration feasible?

In this step we evaluated if there was any practical way to restore the beneficial use of shellfishing.

Staff used the following steps to determine whether to support the proposal of de-designation of the SHELL beneficial use:

1. Determine whether the designated use has been exercised since November 28, 1975.
2. Determine whether water quality in the designated water bodies has supported the SHELL beneficial use since 1975.
 - a. If no, consider whether the water quality condition could be compensated by effluent discharges without violating water conservation requirements?
3. Determine what factors preclude attainment of the SHELL beneficial use.
4. Consider whether restoration in the designated water bodies is an option to support the beneficial use.

4 DATA COLLECTION AND EVALUATION

4.1 Discussion of Bacterial Water Quality Objectives to Protect the Beneficial Use of Shellfishing

The Central Coast Water Board's Basin Plan's numeric water quality objective for bacteria for the SHELL beneficial use reads as follows:

At all areas where shellfish may be harvested for human consumption, the median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 mL, nor shall more than 10% of the samples collected during any 30-day period exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three-tube decimal dilution test is used.

The DHS' standards for fecal coliform are as follows³:

i. The total coliform median or geometric mean MPN of the water does not exceed 70 per 100 mL and not more than 10 percent of the samples exceed a MPN of 230 per 100 mL for a five-tube decimal dilution test.

ii. The fecal coliform median or geometric mean MPN of the water does not exceed 14 per 100 mL and not more than 10 percent of the samples exceed a MPN of 43 for a five-tube decimal dilution test.

³ These numbers are derived from the United States Department of Health and Human Services Food and Drug Administration (FDA), which operates a specific regulatory program directed at shellfish known as the National Shellfish Sanitation Program (1990). If these standards are not attained, the growing areas will be shut down on either a conditional or restricted basis.

In California, DHS uses the fecal coliform standard most often to classify growing areas (as opposed to total coliform).

Staff chose to use DHS' standards of fecal coliform concentrations for the beneficial use of shellfishing for the UAA because they are the most conservative and are the most protective of the beneficial use of shellfishing. The Basin Plan's total coliform standards will not be used because 1) fecal coliform standards are more stringent and therefore more protective of water quality, and 2) total coliform standards in the Basin Plan are not currently used by DHS to manage the shellfish growing areas in other areas of California, and, 3) the majority of available data represent fecal coliform numbers as opposed to total coliform. DHS uses fecal coliform standards to determine whether or not a growing area should be open or closed, therefore, monitoring for fecal coliform is more protective of the beneficial use of shellfishing, since that is the numeric objective that determines whether the public may consume the shellfish, commercially or recreationally.

4.2 Water Quality Data

Water Board staff obtained water quality data from the U.S. EPA storage and retrieval system (STORET) and from Water Board program activities that include the Central Coast Ambient Water Quality Program (CCAMP) and TMDL water quality monitoring. The STORET data included data from 1975 and 1977 and Water Board data was from 1999 to 2006.

Based on this information the Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough have never achieved the United States Department of Health Service's National Shellfish Sanitation Program's standards of 14 MPN/100 mL fecal coliform. Please see Appendix A, STORET Water Quality Data and Appendix B, Water Board Water Quality Data.

4.3 Shellfish Survey - California State University, Monterey Bay

A shellfish survey was conducted by the Watershed Institute, California State University, Monterey Bay (Watson *et al*, 2006). The shellfish survey consisted of four components: phone interviews, historical review, public sign postings, and site monitoring. The following describes the four components of the survey:

- **Phone Interviews:** Phone Interviews were conducted with the primary goal of determining occurrence of shellfish in the Salinas River Lagoon (North), Old Salinas River Estuary, and the Tembladero Slough. Those contacted for interviews were people and organizations in the community that were thought to have knowledge about the three water bodies.
- **Historical Review:** The historical review was conducted by searching online databases for historical data pertaining to the Salinas River Lagoon (North), Old Salinas River Estuary, and the Tembladero

Slough. The databases used were recorded by search engine, keywords, and useful results if any occurred.

- Public sign postings: Public sign postings were the main method of obtaining public response. Signs were posted in public access areas near the Salinas River Lagoon (North), Old Salinas River Estuary, and the Tembladero Slough from August 1, 2006 to September 1, 2006. Contact information was given on the sign and the sign was written in both English and Spanish. This notice was also published in the Salinas paper the Salinas Californian.
- Site monitoring: Site monitoring was conducted from August 1, 2006 to September 1, 2006 by visiting each waterbody and taking photographs, as well as searching for any physical sign that shellfish occurred in the area.

4.3.1 Shellfish Survey Results Salinas River Lagoon (North)

No evidence was found supporting that shellfish harvesting is or has (prior to 1975) occurred in the Salinas River Lagoon. According to a phone interview conducted with Jenny Erbes on July 10, 2006, while monitoring snowy plovers at the lagoon she has never seen anyone taking shellfish from the area for consumption. She did state though that she has seen fishermen taking mollusks off rocks to use as fish bait. From August 1, 2006 to September 1, 2006 signs were posted in the main parking lot of the Salinas National Wildlife Refuge which is one of the main access points for the public. Posted signs at the Salinas River Lagoon yielded no response from the public and while monitoring the site conducting photo-documentation of shellfish species presence shellfish harvesting was never observed.

4.3.2 Shellfish Survey Results Old Salinas River Estuary

No evidence was found supporting that shellfish harvesting is or has (prior to 1975) occurred in the Salinas River Lagoon. According to a phone interview with Captain Doug Huckins of Moss Landing Harbor on July 18, 2006 he has never seen anyone shellfish harvesting in the Old Salinas River Estuary in his twenty one years of work. He stated that he has observed fishermen taking mollusks off the rocks to use as bait. From August 1, 2006 to September 1, 2006 signs were posted at the Carmel River Beach public parking lot on Potrero Rd which is a main access point for the public. Posted signs at the Old Salinas River Estuary yielded no response from the public and while monitoring the site conducting photo-documentation of shellfish species presence shellfish harvesting was never observed.

4.3.3 Shellfish Survey Results for Tembladero Slough

No evidence was found supporting that shellfish harvesting is or has (prior to 1975) occurred in the Tembladero Slough. According to a phone interview with Captain Doug Huckins on July 18, 2006, he has observed a number of crayfish in Carr Lake which feeds into the Slough. It was in Carr Lake that he has heard that residents on Laurel Street collect and consume crayfish. He has never observed shellfish harvesting occurring in the Tembladero Slough. From August 1, 2006 to September 1, 2006 signs were posted at the Haro Street bridge which is a main access point for the public. Posted signs at the Tembladero Slough yielded no response from the public and while monitoring the site conducting photo-documentation of shellfish species presence shellfish harvesting was never observed.

4.4 Basin Plan Designation Questionable

The Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough were not listed as either Inland Surface Waters or Coastal Waters in the 1975 or 1989 Basin Plan. Table 2-2 of the 1989 Basin Plan states that, "Unlisted waterbodies have implied beneficial uses designations for protection of both recreation and aquatic life." Therefore, these three waterbodies were not designated for SHELL prior to the 1994 Basin Plan. In addition, Table 2-2 of the 1989 Basin Plan lists Moss Landing Harbor as Coastal Water with SHELL beneficial use (note that Old Salinas River Estuary and Tembladero Slough drain to the southernmost extent of Moss Landing Harbor via tidal gates). The Moss Landing Harbor SHELL beneficial use contained in Table 2-2 of the 1989 Basin Plan has the following footnote:

"Clamming is an existing beneficial use in the North Harbor and on the south side of the entrance channel to Elkhorn Slough (north of the Pacific Gas and Electric Cooling Water Intake). Presently, no shellfishing use occurs south of the Pacific Gas and Electric Intake."

Staff concluded that shellfish harvesting did not exist prior to 1994 because the SHELL beneficial use for these waterbodies was not included in either the 1975 or 1989 Basin Plan and that the southern portion of Moss Landing Harbor, which receives flow from the Old Salinas River Estuary and Tembladero Slough, did not support SHELL beneficial use.

The 1994 Basin Plan designates the SHELL beneficial use for Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough. The Administrative Record contained no explanation for this change. Staff does not have any information as to why these three waterbodies were not listed for SHELL in 1975 and 1989 and later listed for SHELL in 1994. Staff believes this is further evidence to suggest there was no documentation for Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough being listed for SHELL in the first place.

5 EVALUATION OF ATTAINABILITY OF THE SHELLFISHING BENEFICIAL USE

The shellfishing beneficial use specifies uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial or sport purposes. This includes waters that have in the past, or may in the future, contain significant shellfisheries (emphasis added). In this next section, we evaluate the attainability of the shellfishing beneficial use.

5.1 Attainability of Shellfishing Beneficial Use

5.1.1 Step 1: Is the beneficial use being attained?

The presence of shellfish and/or any records of shellfish being present *since* November 28, 1975 would demonstrate that the SHELL beneficial use exists. Staff's investigation found no known records, individual or agency knowledge that shows shellfish collection occurred anytime after November 28, 1975.

5.1.2 Step 2: Is water quality sufficient to attain the beneficial use?

Bacterial concentrations are persistently higher than water quality objectives, as presented in section 4, and water quality has never been sufficient to attain the beneficial use of shellfishing since November 28, 1975.

Step 2a: Can the condition be compensated for with effluent discharges without violating water conservation requirements?

Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough are not effluent dominated waterbodies. Nor would any amount of increased effluent discharges help to create an environment where shellfish would be able to survive.

5.1.3 Step 3: What factors preclude the attainment of the beneficial use?

The habitat of this area is not consistently conducive to the growth and reproduction of a substantial population of shellfish. Staff does not completely understand exactly why the habitat is not supportive of shellfish but hypothesizes that it has to do with the substrate of the waterbodies, along with seasonal closures (sand bar formation) at the mouth of Salinas River Lagoon (North), tidal gate closures at the northernmost extent of Old Salinas River Estuary (where it meets the southern portion of Moss Landing Harbor) and the subsequent effects of these conditions.

The Salinas River Lagoon (North) is dominated by freshwater inputs. Habitat in the Salinas River Lagoon would be most conducive for fresh water clams, e.g. *Corbicula* (Asian clam). However, there was no information to suggest that the Asian clam was present. The Salinas River Lagoon is a deep channel with fine substrate. The water depth and mud substrate is not conducive to shell fishing activities.

The Old Salinas River Estuary is blocked from direct connection to Moss Landing Harbor via tide gates. Consequently, salinity can fluctuate dramatically. Many clam species are sensitive to salinity and temperature changes, particularly during larval stages. The Salinas River Estuary is a deep channel with fine substrate. Water depth and mud substrate are not conducive to clam survival, nor are they conducive to shell fishing activities.

Salinity in Tembladero Slough is dominated by fresh water. There is periodic tidal influence resulting in elevated salinity, reaching as high as 6.32 parts per thousand (seawater is generally 35 parts per thousand). *Corbicula* (Asian clam) is a freshwater clam that could potentially survive in the salinity environment of Tembladero Slough, but there was no information to suggest this clam was present. Tembladero Slough is a deep channel slough with deep fine substrate. The channel depth (water depth) and substrate is not conducive to shellfish habitat. In addition, water depth and substrate (deep mud), is not conducive to shell fishing activity.

5.1.4 Step 4: Is restoration feasible?

Staff concluded that restoration is not a feasible option as an effort to support the shell fishing beneficial use.

To support the shell fishing beneficial use in the Salinas River Lagoon, Salinas River Estuary, and Tembladero Slough, significant hydrologic and terrestrial changes would need to be made to create suitable habitat and fishing grounds.

Additionally, literature from the early twentieth century indicated that shellfish species commonly consumed by humans were not prevalent in these waterbodies, although they were present in nearby waterbodies, e.g. Elkhorn Slough (Weymouth, 1920). Therefore, it is unlikely that restoration efforts, even if attempted, would result in a viable shellfish population.

6 FINDINGS OF THE UAA

6.1 Basis for Removal of Designated Use

The CFR factors for allowing a State to remove a designated use are listed in 131.10(g). Based on staff's UAA, three factors preclude attainment of SHELL in Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough.

(2) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met;

(4) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use.

(5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unless these conditions may be compensated, unrelated to water quality preclude attainment of aquatic life protection uses.

6.2 Alternatives for Addressing the SHELL Beneficial Use Designation

6.2.1 Alternative A – Removing the SHELL beneficial use

In this case, SHELL is determined to be an inappropriate beneficial use for this waterbody. Additionally, it seems the Central Coast Water Board designated the Estuary as SHELL, assuming the waterbody had shellfishing present without evaluating it to confirm the use. Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough have not demonstrated the SHELL beneficial use qualities nor have there been any societal demands to use this waterbody in this way. Therefore, as a result of a combination of factors described in 40 CFR 131.10(g)(2), (4), and (5) of the Federal water quality standards regulation, Water Board staff concludes that the SHELL designation of Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough does not apply.

6.2.2 Alternative B – No action. Maintain SHELL beneficial use designation

In this case, the status quo is maintained. Not taking any action would make it difficult to write and enforce a fecal coliform TMDL for Lower Salinas River

because the numeric targets would have to be SHELL targets, even though the SHELL use is questionable. Enforcing a TMDL with SHELL numeric targets may impose unnecessary economic impacts on the City and County when they try to implement management measures to achieve a low level of bacteria concentration to protect a use that does not exist. Additionally, it may not be possible to achieve a level that is this low due to potential amounts of natural background levels of coliform.

6.3 Considerations Required for Recommended Alternative

Staff recommends alternative A. In making this recommendation, staff has considered all factors set out in §13241 of the Porter-Cologne Water Quality Control Act:

(a) *Past, present, and probable future beneficial uses of water.*

Shellfish collection did not likely exist in the recent past (i.e. the last 50 years, 1950 - present); shellfishing does not appear to exist currently; and shellfishing is unlikely to be a beneficial use in the future.

(b) *Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.*

Water quality objectives are currently not being met to support the beneficial use of SHELL, however the Lower Salinas River Fecal Coliform TMDL addresses bacterial water quality objectives and bacterial loading in the context of the REC-1 and REC-2 beneficial uses. Once the requirements in the TMDL are implemented, the environmental characteristics (bacterial concentrations) are expected to improve over existing conditions.

(c) *Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.*

Although past and current water quality conditions do not allow for the attainment of SHELL beneficial use, there are other habitat factors such as substrate, salinity, temperature and flow that cannot be reasonably achieved through coordinated control of various factors in the area. However, improved concentrations of bacteria should occur via TMDL implementation, regardless of removal of the SHELL beneficial use.

(d) *Economic considerations.*

With regard to economic considerations, the recommended alternative is not expected to impose any additional cost on either Monterey County or the City of Castroville and may reduce costs by making it more likely to achieve the REC-1 bacterial water quality objectives as opposed to the SHELL bacterial water quality objectives.

(e) *The need for developing housing within the region.*

Alternative A will have no significant impact on the need for developing housing within the region.

(f) *The need to develop and use recycled water.*

The need to develop and use recycled water will not be affected by the proposed modifications.

6.4 Anti-Degradation

Staff considered that there might be concern about the following: Does removal of the SHELL beneficial use allow higher levels of bacteria to further impair Salinas River Lagoon (North), Old Salinas River Estuary, or Tembladero Slough? The current bacteria level in this waterbody regularly exceeds water quality objectives for REC-1 and REC-2 uses. The fecal coliform TMDL for Lower Salinas River establishes substantial reductions in allowable bacteria loading, regardless of the proposed de-designation.

The recommended alternative is also consistent with the Anti-degradation Policy, as it will not lower the water quality of the waterbodies, relative to existing conditions. In assigning water quality objectives to the REC-1 and REC-2 uses that exist, this alternative fulfills the requirement of protecting the level of water quality necessary to protect existing and anticipated beneficial uses.

6.5 Future Considerations

Amending the potential SHELL designated use for Salinas River Lagoon (North), Old Salinas River Estuary, and Tembladero Slough does not preclude re-designation of this use should conditions within this waterbody change in the future. For example, should some major hydrologic changes modify the habitat of this waterbody to the point where shellfish would be able to grow and thrive in numbers that would allow for their collection and consumption, the beneficial use designation could be modified.

7 REFERENCES

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**Appendix J.1
STORET Water Quality Data**

Appendix J.1- STORET Water Quality Data

Waterbody	Site Description	Sample Date	Total Coliform (MPN)	Fecal Coliform (MPN)	Source	Comparable Water Board Monitoring Site
Old Salinas River Estuary	Tide Gate	12-Jan-77	2400	2400	STORET	OLS-POT
Old Salinas River Estuary	Near Tembladero Slough	12-Jan-77	1500	200	STORET	OLS-MON
Salinas River Lagoon (N)	Twin Bridges	8-Oct-75	930	36	STORET	SAL-MON
Salinas River Lagoon (N)	Twin Bridges	9-Oct-75	230	91	STORET	SAL-MON
Salinas River Lagoon (N)	Twin Bridges	12-Jan-77	4600	430	STORET	SAL-MON
Salinas River Lagoon (N)	Hyw1	8-Oct-75	24000	430	STORET	Near SAL-MON
Salinas River Lagoon (N)	Hyw1	9-Oct-75	24000	36	STORET	Near SAL-MON
Salinas River Lagoon (N)	Hyw1	12-Jan-77	24000	91	STORET	Near SAL-MON
Tembladero Slough	at Molera Road	12-Jan-77	4600	2400	STORET	TEM-MOL

**Appendix J.2
Water Board Water Quality Data**

SiteTag	DateTime	Total Coliform	E. Coli	Total Coliform Quant. Flag	E. Coli Quant. Flag	Fecal Coliform	O157:H7	Water Board Program	NOTES
OLS-MON	6/1/1999 10:30					50		CCAMP	
OLS-MON	6/28/1999 15:55					300		CCAMP	
OLS-MON	6/28/1999 15:55					300		CCAMP	
OLS-MON	6/28/1999 16:05					300		CCAMP	
OLS-MON	7/26/1999 13:30					500		CCAMP	
OLS-MON	11/1/1999 14:15					230		CCAMP	
OLS-MON	12/6/1999 10:50					350		CCAMP	
OLS-MON	1/10/2000 10:05					240		CCAMP	
OLS-MON	1/10/2000 10:15					490		CCAMP	
OLS-MON	2/7/2000 10:00					1750		CCAMP	
OLS-MON	4/26/2001 11:00					7000		CCAMP	
OLS-MON	5/31/2001 11:00					4600		CCAMP	
OLS-MON	6/28/2001 9:30					24000		CCAMP	
OLS-MON	7/25/2001 10:23					24000		CCAMP	
OLS-MON	8/30/2001 9:19					1100		CCAMP	
OLS-MON	9/18/2001 10:11					5400		CCAMP	
OLS-MON	10/16/2001 10:44					16000		CCAMP	
OLS-MON	11/13/2001 10:19					92000		CCAMP	
OLS-MON	12/20/2001 9:41					30		CCAMP	
OLS-MON	12/20/2001 9:41					30		CCAMP	
OLS-MON	1/21/2002 11:00					130		CCAMP	
OLS-MON	2/25/2002 10:25					23		CCAMP	
OLS-MON	3/18/2002 12:05					9200		CCAMP	
OLS-MON	4/15/2002 10:58					700		CCAMP	
OLS-MON	5/13/2002 11:13					330		CCAMP	
OLS-MON	7/17/2002 10:02					1600		CCAMP	
OLS-MON	8/14/2002 9:34					240		CCAMP	
OLS-MON	9/11/2002 9:36					2200		CCAMP	
OLS-MON	10/9/2002 10:28					230		CCAMP	
OLS-MON	11/12/2002 10:10					500		CCAMP	
OLS-MON	12/11/2002 9:21					500		CCAMP	
OLS-MON	2/10/2003 10:31					30		CCAMP	
OLS-MON	3/11/2003 11:26					110		CCAMP	
OLS-MON	3/1/2004 10:17					1300		CCAMP	
OLS-MON	3/29/2004 9:06					130		CCAMP	
OLS-MON	5/17/2004 8:46					300		CCAMP	
OLS-MON	6/21/2004 10:31					8000		CCAMP	
OLS-MON	8/3/2004 9:48					16000		CCAMP	
OLS-MON	11/9/04 11:00 AM	7215.0	256.0					TMDL	
OLS-MON	11/9/04 11:00 AM	2420.0	648.8					TMDL	
OLS-MON	12/7/04 2:35 PM	2420.0	151.5					TMDL	
OLS-MON	1/12/05 2:20 PM	2420	2420.0					TMDL	
OLS-MON	2/16/05 2:00 PM	2420.0	1119.9					TMDL	
OLS-MON	3/23/05 11:50 AM	2419.2	2419.2	>	>			TMDL	
OLS-MON	4/20/05 2:10 PM	15531	122				0	TMDL	
OLS-MON	6/20/05 16:30	2419	1388	>			0	TMDL	
OLS-MON	7/26/2005 13:40	24192	85	>			0	TMDL	
OLS-MON	8/16/2005 12:10	2419	866	>			0	TMDL	
OLS-MON	10/25/2005	2419	170	>			0	TMDL	

Appendix J.2 - Water Board Water Quality Data

SiteTag	DateTime	Total Coliform	E. Coli	Total Coliform Quant. Flag	E. Coli Quant. Flag	Fecal Coliform	O157:H7	Water Board Program	NOTES
OLS-MON	11/15/2005	19863	185				0	TMDL	
OLS-MON	12/13/2005	9900	600				0	TMDL	
OLS-MON	1/4/2006	17,700	1900				0	TMDL	
OLS-MON	1/17/2006	21,780	2,590				0	TMDL	
OLS-MON	3/7/06	16,070	410				0	TMDL	Colilert, heavy ra
OLS-POT	4/26/1999 9:30					26		CCAMP	
OLS-POT	6/1/1999 9:20					300		CCAMP	
OLS-POT	6/28/1999 15:40					170		CCAMP	
OLS-POT	7/26/1999 13:00					110		CCAMP	
OLS-POT	7/26/1999 13:15					140		CCAMP	
OLS-POT	11/1/1999 15:30					490		CCAMP	
OLS-POT	12/6/1999 10:30					240		CCAMP	
OLS-POT	1/10/2000 9:45					490		CCAMP	
OLS-POT	2/7/2000 9:45					54000		CCAMP	
OLS-POT	11/9/04 10:45 AM	2420.0	57.8					TMDL	
OLS-POT	11/9/04 10:45 AM	24200.0	121.0					TMDL	
OLS-POT	12/7/04 2:50 PM	2420.0	1986.3					TMDL	
OLS-POT	1/12/05 2:40 PM	2420	2420.0					TMDL	
OLS-POT	2/16/05 2:10 PM	2420.0	2420.0				1	TMDL	
OLS-POT	3/23/05 12:05 PM	2419.2	2419.2	>	>		1	TMDL	
OLS-POT	4/20/05 2:25 PM	24192	160				0	TMDL	
OLS-POT	6/20/05 16:45	1733	20				0	TMDL	
OLS-POT	7/26/2005 14:00	2419	866	>			0	TMDL	
OLS-POT	8/16/2005 12:20	2419	2419	>			0	TMDL	
SAL-GON	1/12/05 3:50 PM	2420	727.0					TMDL	
SAL-GON	2/16/05 3:10 PM	2420.0	435.2					TMDL	
SAL-GON	2/16/05 3:10 PM	2420.0	770.1					TMDL	
SAL-GON	4/20/05 9:05 AM	6131	2				0	TMDL	
SAL-GON	4/20/05 9:05 AM	6488	3				0	TMDL	
SAL-GON	6/20/05 11:30	228	50				0	TMDL	
SAL-GON	7/26/2005 15:35	2419	33	>			0	TMDL	
SAL-GON	8/16/2005 14:30	2419	115	>			0	TMDL	
SAL-GON	12/13/2005	1486	32				0	TMDL	
SAL-GON	1/17/2006	1576	20				0	TMDL	
SAL-MON	4/26/1999 10:15					30		CCAMP	
SAL-MON	6/1/1999 10:45					130		CCAMP	
SAL-MON	7/26/1999 13:45					34		CCAMP	
SAL-MON	11/1/1999 14:30					350		CCAMP	
SAL-MON	11/1/1999 14:45					1300		CCAMP	
SAL-MON	12/6/1999 11:15					49		CCAMP	
SAL-MON	1/10/2000 10:30					49		CCAMP	
SAL-MON	2/7/2000 10:15					240		CCAMP	
SAL-MON	2/7/2000 10:30					230		CCAMP	
SAL-MON	4/26/2001 11:30					790		CCAMP	
SAL-MON	5/31/2001 11:30					130		CCAMP	
SAL-MON	6/28/2001 10:01					170		CCAMP	
SAL-MON	11/9/04 11:30 AM	3654.0	10.0					TMDL	
SAL-MON	11/9/04 11:30 AM	5475.0	10.0					TMDL	
SAL-MON	11/9/04 11:30 AM	2420.0	27.5					TMDL	

Appendix J.2 - Water Board Water Quality Data

SiteTag	DateTime	Total Coliform	E. Coli	Total Coliform Quant. Flag	E. Coli Quant. Flag	Fecal Coliform	O157:H7	Water Board Program	NOTES
SAL-MON	11/9/04 11:30 AM	2420.0	39.1					TMDL	
SAL-MON	12/7/04 2:30 PM	2420.0	57.3					TMDL	
SAL-MON	1/12/05 2:10 PM	2420	816.4					TMDL	
SAL-MON	2/16/05 1:50 PM	2420.0	1046.2					TMDL	
SAL-MON	3/23/05 11:35 AM	2419.2	2419.2	>	>			TMDL	
SAL-MON	6/20/05 16:35	24192	0				0	TMDL	
SAL-MON	7/26/2005 13:30	2419	11	>			0	TMDL	
SAL-MON	8/16/2005 11:50	2419	25	>			0	TMDL	
SAL-MON	10/25/2005	2419	1	>	<		0	TMDL	
SAL-MON	11/15/2005	1789	10				0	TMDL	
SAL-MON	4/20/05 14:00 PM	5475	10				0	TMDL	
TEM-MOL	4/26/2001 11:10					170		CCAMP	
TEM-MOL	5/31/2001 11:15					9200		CCAMP	
TEM-MOL	6/28/2001 9:41					3500		CCAMP	
TEM-MOL	7/25/2001 10:32					1300		CCAMP	
TEM-MOL	8/30/2001 9:37					2300		CCAMP	
TEM-MOL	9/18/2001 10:25					1300		CCAMP	
TEM-MOL	10/16/2001 10:53					3500		CCAMP	
TEM-MOL	11/13/2001 10:40					54000		CCAMP	
TEM-MOL	12/20/2001 9:55					500		CCAMP	
TEM-MOL	1/21/2002 11:14					230		CCAMP	
TEM-MOL	2/25/2002 10:43					49		CCAMP	
TEM-MOL	3/18/2002 12:12					3500		CCAMP	
TEM-MOL	4/15/2002 11:12					170		CCAMP	
TEM-MOL	5/13/2002 11:25					110		CCAMP	
TEM-MOL	6/17/2002 11:02					240		CCAMP	
TEM-MOL	7/17/2002 10:13					130		CCAMP	
TEM-MOL	8/14/2002 9:46					80		CCAMP	
TEM-MOL	9/11/2002 9:46					500		CCAMP	
TEM-MOL	10/9/2002 10:39					800		CCAMP	
TEM-MOL	11/12/2002 10:23					230		CCAMP	
TEM-MOL	12/11/2002 9:36					17000		CCAMP	
TEM-MOL	12/11/2002 9:36					17000		CCAMP	
TEM-MOL	2/10/2003 10:49					50		CCAMP	
TEM-MOL	3/11/2003 11:35					70		CCAMP	
TEM-MOL	3/1/2004 10:35					900		CCAMP	
TEM-MOL	3/29/2004 9:31					500		CCAMP	
TEM-MOL	5/17/2004 8:58					500		CCAMP	
TEM-MOL	6/21/2004 10:43					500		CCAMP	
TEM-MOL	8/3/2004 10:08					240		CCAMP	
TEM-MOL	11/9/04 11:10 AM	2420.0	178.5					TMDL	
TEM-MOL	11/9/04 11:10 AM	24200.0	203.0					TMDL	
TEM-MOL	12/7/04 2:40 PM	2420.0	1986.3					TMDL	
TEM-MOL	1/12/05 2:30 PM	2420	2420.0					TMDL	
TEM-MOL	2/16/05 2:03 PM	2420.0	2420.0				1	TMDL	
TEM-MOL	3/23/05 11:55 AM	2419.2	2419.2	>	>		1	TMDL	
TEM-MOL	4/20/05 2:15 PM	24192	233				0	TMDL	
TEM-MOL	6/20/05 16:35	7215	74				0	TMDL	
TEM-MOL	7/26/2005 13:45	2419	111	>			0	TMDL	

Appendix J.2 - Water Board Water Quality Data

SiteTag	DateTime	Total Coliform	E. Coli	Total Coliform Quant. Flag	E. Coli Quant. Flag	Fecal Coliform	O157:H7	Water Board Program	NOTES
TEM-MOL	8/16/2005 12:15	2419	210	>			0	TMDL	
TEM-MOL	10/25/2005	2419	110	>			0	TMDL	
TEM-MOL	11/15/2005	12033	122				0	TMDL	
TEM-MOL	12/13/2005	4080	630				0	TMDL	
TEM-MOL	1/4/2006	14,100	3,100				0	TMDL	
TEM-MOL	1/17/2006	21,050	3,360				0	TMDL	
TEM-MOL	3/7/06	141,360	1,600				0	TMDL	Colilert, heavy ra
TEM-PRE	4/26/1999 10:40					1400		CCAMP	
TEM-PRE	6/1/1999 11:00					500		CCAMP	
TEM-PRE	6/28/1999 16:45					900		CCAMP	
TEM-PRE	7/26/1999 14:00					30		CCAMP	
TEM-PRE	11/1/1999 14:50					490		CCAMP	
TEM-PRE	12/6/1999 11:30					240		CCAMP	
TEM-PRE	1/10/2000 10:45					240		CCAMP	
TEM-PRE	2/7/2000 10:45					2300		CCAMP	
TEM-PRE	11/9/04 10:15 AM	24200.0	272.0					TMDL	
TEM-PRE	11/9/04 10:15 AM	2420.0	325.5					TMDL	
TEM-PRE	12/7/04 3:00 PM	2420.0	2419.2					TMDL	
TEM-PRE	1/12/05 2:45 PM	2420	2420.0					TMDL	
TEM-PRE	1/12/05 2:45 PM	2420	2420.0					TMDL	
TEM-PRE	2/16/05 2:25 PM	2420.0	2420.0				1	TMDL	
TEM-PRE	3/23/05 12:15 PM	2419.2	2419.2	>	>		1	TMDL	
TEM-PRE	3/23/05 12:15 PM	2419.2	2419.2	>	>			TMDL	
TEM-PRE	4/20/05 2:35 PM	24192	373				0	TMDL	
TEM-PRE	6/20/05 16:55	3968	345				0	TMDL	
TEM-PRE	7/26/2005 14:10	24192	325	>			0	TMDL	
TEM-PRE	8/16/2005 12:25	2419	416	>			0	TMDL	
TEM-PRE	8/16/2005 12:25	2419	461	>			0	TMDL	
TEM-PRE	10/25/2005	2419	74				0	TMDL	
TEM-PRE	11/15/2005	5504	161				0	TMDL	
TEM-PRE	12/13/2005	3430	84				0	TMDL	
TEM-PRE	1/4/2006	20,100	3,800				0	TMDL	
TEM-PRE	1/17/2006	12,460	400				0	TMDL	
TEM-PRE	3/7/06	21,780	1,610					TMDL	Colilert, heavy ra

